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MERCHANT SHIPPING IN THE SW APPROACHES TO THE BRITISH ISLES.(U)
NOV 77 J S TARCHI, P BURTON
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SACLANT ASW
RESEARCH CENTRE
MEMORANDUM

MERCHANT SHIPPING IN THE SW APPROACHES TO THE BRITISH ISLES

by

JESSIE STEELE TARCHI AND PETER BURTON

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6 MERCHANT SHIPPING IN THE SW APPROACHES TO THE BRITISH ISLES.

by

10 Jessie Steele / Tarchi ~~and~~ Peter / Burton

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MERCHANT SHIPPING IN THE SW APPROACHES TO THE BRITISH ISLES

by

Jessie Steele Tarchi and Peter Burton

ABSTRACT

↙ *Merchant shipping flow in and out of Europe through the English Channel and Celtic Sea is analysed in terms of numbers, size, and destination.* ↗

INTRODUCTION

This memorandum presents a study of the flow of merchant shipping to and from northern European ports (including British and Irish) passing through the southwestern approaches to the British Isles. It has been prepared in support of a study of antisubmarine warfare in the English Channel. It gives numbers, sizes, and types of merchant ships (excluding fishing boats and ferries), together with areas of arrival and departure.

Two sources of data were used: Lloyd's List* [1] — a daily newspaper published every day except Sunday — and Lloyd's Register of Shipping* [2]. Lloyd's List gives merchant ship movements to and from ports all over the world, together with their destinations and ports of departure. Lloyd's Register of Shipping lists details of each ship: the type, tonnage, country of registration, etc.

Three periods of one week each have been studied; in November 1975, in February 1976, and in April 1977. Data for all ships entering or passing through the Channel area for these three periods have been extracted and stored. The tables presented represent a digest of this information aimed specifically towards the requirements of the Channel study, but also of general interest in relation to the whole NATO shipping scene.

The tables presented do not represent an exhaustive analysis of the data recorded. Further analysis can be directed towards other specific questions.

* Specimen pages of Lloyd's List and Lloyd's Register of Shipping are given in Appendix A.

1 SHIPPING ACROSS AREA BOUNDARIES

Three boundary lines have been drawn (Fig. 1) to delineate the limits of the English Channel and the adjacent northern Celtic Sea and Bristol Channel area.

- A Land's End to Dursey Head,
- B Land's End to Ile d'Ouessant (Ushant),
- C Dungeness to Cap Gris Nez.

Shipping flows across these boundary lines are given in Table 1 for each of the three study periods.

OBSERVATION ON TABLE 1

The data reflect the generally slow increase in trade that has been taking place since 1975.

TABLE 1

AVERAGE NUMBERS OF SHIPS PER DAY CROSSING BOUNDARIES IN BOTH DIRECTIONS*

	Boundary		
	A	B	C
Nov 75	56	155	167
Feb 76	72	179	184
Apr 77	65	188	189

* All data in this memorandum refer to ships sailing in both directions. To obtain numbers of arrivals only, divide tabulated figures by two.

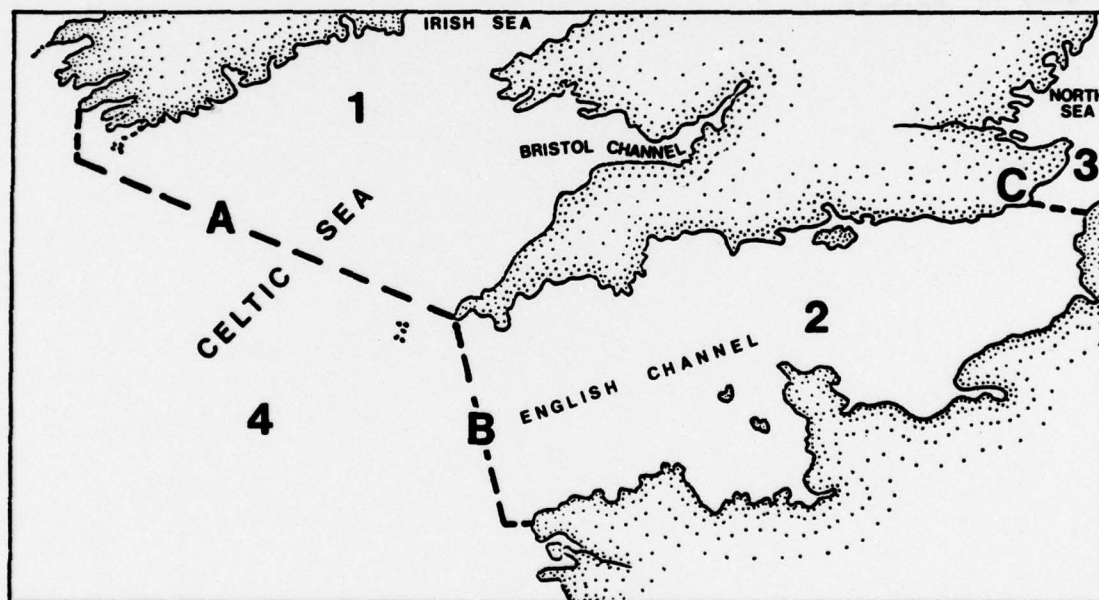


FIG. 1 SOUTHWESTERN APPROACHES TO THE BRITISH ISLES
SHOWING BOUNDARY LINES USED IN STUDY

The general patterns of the shipping flow in the three study weeks are shown in Fig. 2 a,b,c. Shipping has been broken down into routes according to the location of the terminal ports. Four areas (see Fig. 1) have been chosen in relation to the boundaries defined earlier. These are:

1. Celtic Sea — British and Irish ports to the east and north of line A (includes Bristol Channel)
2. Channel — English and French ports between lines B and C.
3. North Sea — British and North Europe ports to the east and north of line C, including Baltic ports.
4. Rest of the World — All other ports.

Routes have been defined in terms of terminal ports in these areas, as listed in Table 2.



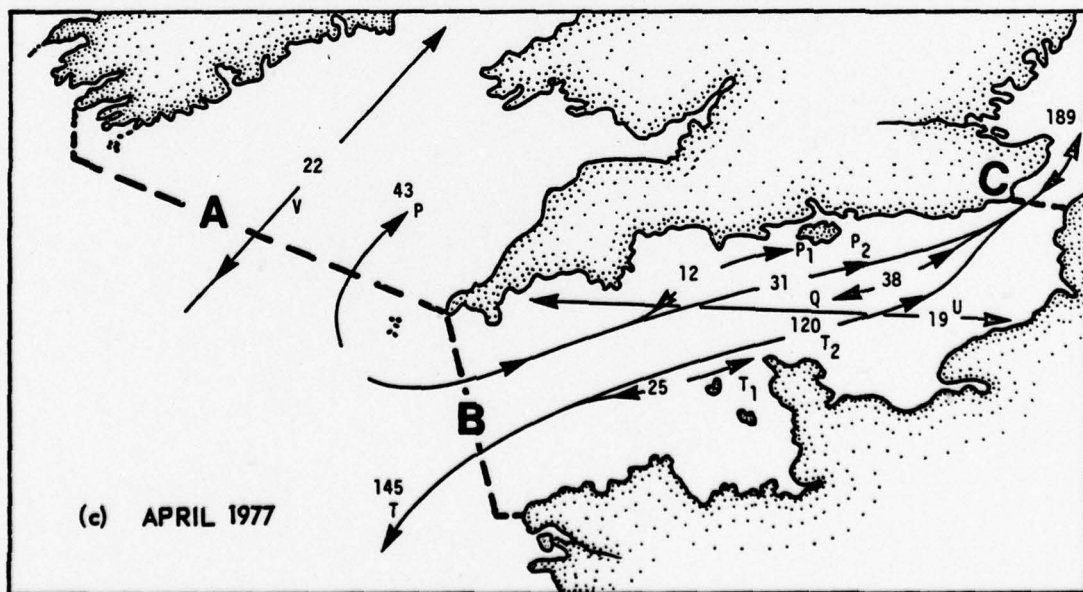
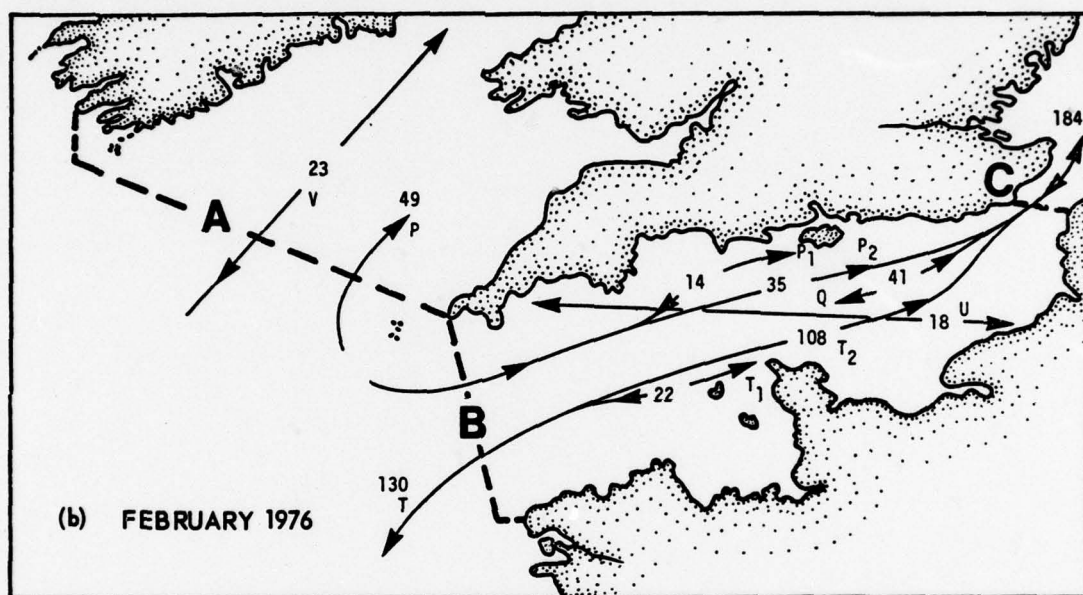
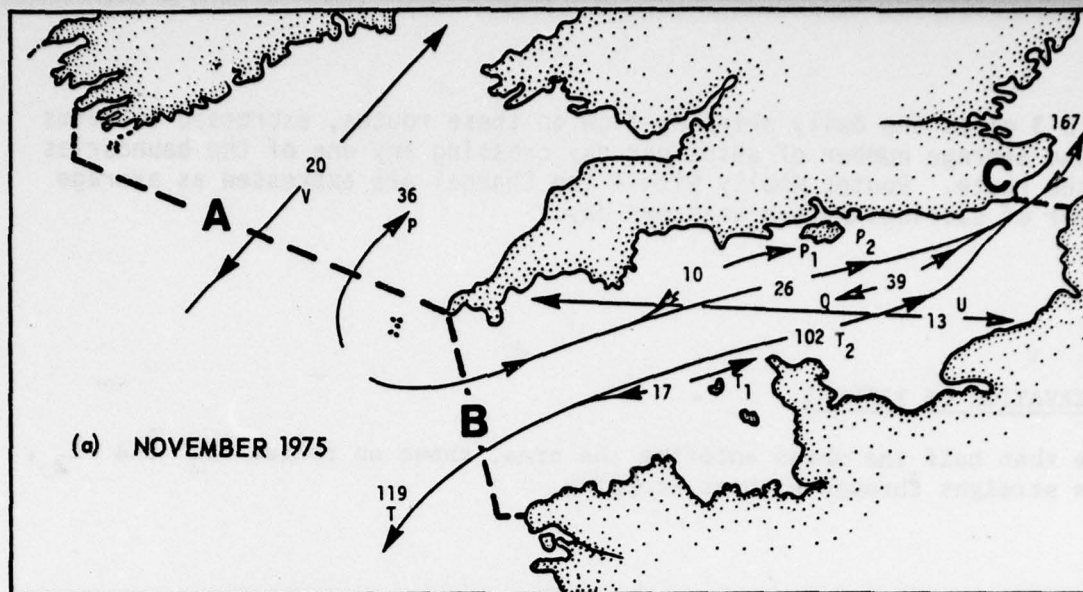


FIG. 2 SHIPPING FLOW — SHIPS PER DAY IN BOTH DIRECTIONS — DURING THE THREE STUDY PERIODS. (Data are tabulated in Table 3.)

Table 3 gives the daily shipping flow on these routes, expressed in terms of the average number of ships per day crossing any one of the boundaries on the route. Routes wholly within the Channel are expressed as average number of sailings and arrivals per day.

OBSERVATION ON TABLE 3

More than half the ships entering the area, those on routes P_2 and T_2 , pass straight through without stopping.

TABLE 2

R O U T E S

	Route Indicator		Terminal Ports	Boundary Crossing
Coastal Routes	P	P ₁	Celtic Sea - Channel	A, B
		P ₂	Celtic Sea - North Sea	A, B, C
	Q		Channel - North Sea	C
	U		Within Channel	-
Short Sea* and Ocean Routes	T	T ₁	Rest of World - Channel	B
		T ₂	Rest of World - North Sea	B, C
	V		Rest of World - Celtic Sea	A

* Short sea routes terminate between Brest and Gibraltar or in the Mediterranean (see Table 9).

TABLE 3

SHIPPING FLOW

(ships per day in both directions)

	Coastal				Short Sea & Ocean			Total*
	P ₁	P ₂	Q	U	T ₁	T ₂	V	
Nov 75	10	26	39	13	17	102	20	227
Feb 76	14	35	41	18	22	108	23	261
Apr 77	12	31	38	19	25	120	22	267

* The totals represent the average number of ships per day entering and leaving the area. Ferries, fishing boats, and pleasure craft are excluded.

Shipping on all routes has been classified by four main types of ships, as shown in Table 4. These are: tankers, bulk carriers, general cargo, and container ships. Other specialized types, such as gas tankers, roll-on/roll-off (RO/RO), combined carriers (OBO), combined container/general cargo, are classified as 'others'. There are a small number, usually very new ships, that do not appear in Lloyd's Register. These are classified as 'Unknown'.

OBSERVATIONS ON TABLE 4

1. The increase in shipping between Nov 75 and Apr 77 appears mainly as an increase in general cargo ships.
2. Specialized types of ships, e.g. containers and those appearing under 'others', show the largest relative increase.
3. The reduction in number of tankers between Nov 75 and Apr 77 is accompanied by an increase in size (see Table 5).

TABLE 4

SHIPS ON ALL ROUTES

(ships per day in both directions)

	Tankers	Bulk Carriers	General Cargo	Container	Others	Unknown	Total
Nov 75	42	17	131	8	26	3	227
Feb 76	46	17	153	7	28	9	261
Apr 77	39	18	154	11	34	12	267

The distribution of the size of the principal types of ship on all routes is presented in Tables 5, 6, 7, and 8.

OBSERVATIONS ON TABLE 5

1. The large number of small tankers between 1000 and 5000 dwt are employed mainly on coastal and short sea routes.
2. The considerable number of tankers between 20 000 and 50 000 dwt are used:
 - a. For off-loading from VLCCs (Very Large Crude Carriers).
 - b. For the carriage of crude oil on ocean routes where no ports are available for very large tankers, e.g. east coast of USA.
 - c. As oil-products tankers.
3. A trend towards larger VLCCs is seen between Nov 75 and Apr 77.

OBSERVATIONS ON TABLE 6

1. Grain carriers form the peak in the distribution between 20 000 and 30 000 dwt.
2. Ships larger than 60 000 dwt are mainly ore carriers.
3. Small bulk carriers specifically for coastal routes are uncommon.

TABLE 5

SIZE DISTRIBUTION OF TANKERS
(in thousands of dead-weight tonnes)

	0-1	1-5	5-10	10-20	20-50	50-100	100-200	200-300	> 300
Nov 75	13	121	13	27	64	18	8	25	2
Feb 76	16	143	16	29	61	18	7	30	3
Apr 77	6	112	12	27	62	15	6	31	4

TABLE 6

SIZE DISTRIBUTION OF BULK CARRIERS
(in thousands of dead-weight tonnes)

	0-10	10-20	20-30	30-40	40-50	50-60	> 60
Nov 75	3	13	42	19	7	7	25
Feb 76	3	16	46	11	9	10	26
Apr 77	3	17	54	15	4	7	25

OBSERVATIONS ON TABLE 7

1. The large numbers of general cargo ships smaller than 3000 dwt are used on coastal and short sea routes.
2. The average size of ocean-going general cargo ships is increasing. 10 000 to 15 000 dwt is now the most common size on ocean routes.

OBSERVATIONS ON TABLE 8

Container ships fall into three classes:

- a. Smaller than 4000 dwt for coastal and short sea routes.
- b. 15 000 to 25 000 dwt for most ocean routes.
- c. Larger than 35 000 dwt for the longest ocean routes (e.g. Europe to Far East).

TABLE 7

SIZE DISTRIBUTION OF GENERAL-CARGO SHIPS
(in thousands of dead-weight tonnes)

	0-0.5	0.5-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-15	15-20	20-30	> 30
Nov 75	49	167	229	122	48	31	42	21	31	37	14	90	29	3	6
Feb 76	48	204	231	145	55	46	31	23	34	26	38	136	44	4	3
Apr 77	52	180	238	146	80	34	28	25	35	31	41	140	37	7	1

TABLE 8

SIZE DISTRIBUTION OF CONTAINER SHIPS
(in thousands of dead-weight tonnes)

	0-2	2-4	4-6	6-8	8-10	10-15	15-20	20-30	30-40	40-50
Nov 75	8	17	0	0	0	7	6	11	2	5
Feb 76	7	10	2	0	2	2	14	10	2	3
Apr 77	9	10	2	2	0	7	19	9	9	7

5 DESTINATIONS OF SHORT-SEA AND OCEAN SHIPPING

Routes T and V (Table 2) include all short-sea and ocean shipping between northern Europe ports and the 'Rest of World' that enter or pass through the area. Routes T and V can thus be broken down into sub-routes to and from the area, defined in terms of the major world areas shown in Table 9.

The flow of ships of all types on these routes is given in Table 10.

OBSERVATIONS ON TABLE 10

1. "Biscay" and Mediterranean shipping, B and M, (which are the short sea routes) form about 50% of the total numbers.
2. Middle East routes (P) carry relatively few ships. Most are of very large tonnage.
3. The main growth areas are: "Biscay" (B), Mediterranean (M), West Africa (W).
4. Middle East routes (P) are returning to levels existing before the 1973 oil crisis.

TABLE 9

SHORT-SEA AND OCEAN ROUTES

	<u>Route Indicator</u>	<u>Area</u>	<u>Regions included</u>
Short-Sea Routes	{ B	"Biscay"	Brest to Gibraltar
	{ M	Mediterranean	Gibraltar eastwards
Ocean Routes	{ N	North America	Canada, USA, Caribbean, Panama Canal
	{ W	West Africa	Gibraltar to Cape Town
	{ P	Middle East	Persian Gulf, Red Sea
	{ S	South America	South of Panama Canal zone
	{ E	East Africa	Port Elizabeth to Persian Gulf
	{ F	Far East	Asia, Australasia

TABLE 10

SHIPPING FLOW ON SHORT-SEA AND OCEAN ROUTES
(ships per day in both directions)

	B	M	N	W	P	S	E	F	Total
Nov 75	32	36	27	18	8	7	3	8	139
Feb 76	38	36	27	21	9	9	4	9	153
Apr 77	41	41	25	26	12	10	2	11	168

The sizes of ships of any one type are strongly dependent on the route on which they are employed. Table 11 gives the numbers and average sizes of ships employed on coastal, short-sea, and ocean routes (see Table 2 for description of routes).

OBSERVATIONS ON TABLE 11

1. On coastal and short-sea routes three types of tankers are found: small tankers of average 3000 to 4000 dwt, tankers of about 50 000 dwt for off-loading the VLCCs, partly unloaded VLCCs.
2. On coastal routes two types of container ships are found: coastal container ships of 1000 to 2000 dwt and ocean-going container ships larger than 15 000 dwt that load at several N. European container ports before proceeding on their ocean voyage.
3. On West Africa and Middle East routes, W and P, very few container ships are found. Containers are carried in general cargo ships, RO/ROs, or other vessels that do not require special port facilities.
4. The low average dwt of general cargo ships on the N. America route, N, results from trade in small ships on secondary routes: for example, to the West Indies and Central America. Non-bulk cargoes to USA are carried mainly in container and other specialized ships.
5. A significant proportion of crude oil imports is carried in OBOs.

TABLE 11

TOTAL NUMBERS AND AVERAGE dwt OF SHIPS ON COASTAL, SHORT SEA, AND OCEAN ROUTES
(Nov 75, Feb 76, Apr 77)

	COASTAL		SHORT SEA		OCEAN							
	T + Q + U		B + M		N		W		P		S + E + F	
	No.	Av. dwt x 10 ³	No.	Av. dwt x 10 ³	No.	Av. dwt x 10 ³	No.	Av. dwt x 10 ³	No.	Av. dwt x 10 ³	No.	Av. dwt x 10 ³
Tankers	24	12	8.5	20	2.5	35	1.5	74	5	220	1	23
Bulk carriers	2	21	2	26	8	42	2	41	-	-	3	48
General cargo	55	3.5	53	3.8	8	8.3	14	6.4	3	11	12	12
Container	2.5	14	2	3.2	3	20	-	-	-	-	1	37
Others*												
Type A	1	64	0.5	44	1	63	0.5	66	1	173	1.5	101
Type B	10	3.1	5	5.2	3	17	2.5	7.6	1	8.0	1.5	8.8

* 'Others, Type A' include OBOs, Ore Carriers, etc.

'Others, Type B' include RO/RO, LASH, mixed cargo/container, etc.

REFERENCES

1. LLOYD'S LIST, London, U.K.: Lloyds of London Press Ltd, 1734 ... daily.
2. LLOYD'S REGISTER OF SHIPPING. Register of Shipping 1976-77. London, U.K., Lloyd's Register of Shipping, 1976.

DATA SOURCES

SHIPPING MOVEMENTS

[illegible]

EXAMPLE OF DATA PROVIDED BY LLOYD'S LIST [1]

REGISTER OF SHIPS 1977-78

ERMA

6703240	ERMA	3 859 1 818		1966	G. Dimitrov Shipyard—Varna	M Tanker	Oil	
	The People's Republic of China People's Republic of China	—		131.07	16.01	15 Td ER		10.5kn
				1 dk				
8105859	ERMINE	108 93		1943	Seattle, Wa	Wood TM Fishing	2 Oil each 3Cy. 148kW (200bhp)	
WA4729		—		24.39	7.57	Side-fishing	Superior Engine Co.	
244852	C W C Fisheries Inc.	—		24.39	7.52	Mchy. aft		
Rdr RT	Ketchikan, Ak	United States of America		1 dk				
6106461	ERMINE	101 36		1960	Schepb. K. Hakvoort—Monnickendam	M Fishing	Oil 2SA 6Cy.	
	O. Willie	—		26.88	6.25	(95) Side-fishing	N.V. Mch. Boines	Krimpen
DI Ead		Federal Republic of Germany				Mchy. aft		
RT								
7234521	ERMINIA PRIMA	72 730 63 728		1973	Italcantieri S.p.A.—Mil	(4279) S Ore/Oil Carrier	2 S Turb dr geared to ac shaft 20 888kW (28 000bhp)	
IBLC		—		297.29	40.55		Ansaldo Meccanico Nucleare S.p.A	Gen
878	SITA, Siciliana Tanker S.p.A.	136 182		279.94	40.75	10 Ho 12 Ta ER	Gen 1 x 1200kW 1 x 900kW	16.5kn
DI Ead	Palermo	Italy		1 dk		G.89 482 L.80 760	Fuel 8 878.0t (hvf)	
Gc Pld						10 Ha (all)		
Rdr RT								
6426988	ERMINIO BORIO	171 81		1955	Cant. Nav. ICAN—Pesaro	M Fishing	Oil 4SA 6Cy. 265 x 410	
IRCZ	ex Nicole Marchionni-63	—		35.01	6.76	Side-Trawler	336kW (450bhp)	Gen
553	Giorgio Melchiorri	—		26.71	6.53		Ansaldo Stab. Mecc.	
Ead Rdr	Rome	Italy						
7214823	ERMIS	15 951 11 711	Φ100A1 strengthened for heavy cargoes. Nos. 2 & 5 holds may be empty	1972-9	N.V. Boelwerf S.A.—Terna	(1464) M Bulk Carrier	Oil 2SA 6Cy. 700 x 1200	
SWUA		30 255	ΦLMC	190.02	22.99	6 Ho 19.5 20.4 26.9 21.0 26.9	8 356kW (11 200bhp)	MAN
DI Ead	Estrella Valiente Navegacion S.A.	Greece		181.03	22.93	23.1 ER	A.C.E.C.	Ght
Gc Rdr	Præus			P 33.3 F 16.8 1 dk	14.51	G.36 984 8.35 236	Gen 3 x 450kW 440V 60Hz a.c.	15.5kn
RTm/v				UHS		8 Ha (11.1 16.6 18.2 14.1 18.2 14.1 x 9.9) ER	Fuel 274.5t (d.o.) 1 945.5t (hvf)	
				EL Lt 21'U3		18W Der 6(20) 1(5)		
6011640	ERMIS	7 323 3 987	Φ100A1 Ice Class 3	SS 1/73	1960-10	Kieler Howaldtswerke A.G.—Kiel	OSD/CSD	
SKGT	ex Aktman-74	—	ΦLMC		157.84	19.59	Oil 2SA 6Cy. 760 x 1550	
1771	in Cie. Naviera S.A.	Greece		EL et 21'SQ	9.278	(1098)	5 819kW (7 800bhp)	Win
DI Ead	Præus	8 969			19.50		Sulzer Bros. Ltd.	
Gc Rdr		5 911			P 7.1 F 14.7 1 dk & S dk		2 AuxB 0.69MPa (100lb/in ²)	
		13 997			rt 152			
					Coll BH to S dk 7 to 2nd dk WB3328t incl. Tunnel tanks 105t DTmt 1407t			
8221221	ERMIS	500 303	ΦLR class withdrawn 23/4/76		1967-12	Ams. Schb. G. de Vries Lentsch	M General Cargo	
SV3399	ex Buchholz-71 ex Mare Bonum-69	863			—Ams	(2485)	Oil 4SA 6Cy. 320 x 450	
98	ex Anne F-63	—			58.09	9.78	492kW (660bhp)	Kin
DI Ead	A. Sdouggos	Greece			52.76	9.20	1 Ho 34.8 ER	
Rdr RTm	Michael Gglinis Thessaloniki				P 14.7 F 9.5 1 dk	4.07	G.1090 8.1 005	10.5kn
					RW rt 102		2 Ha (each 12.1 x 5.0) ER	
							2W Der 2(3)	
7387448	ERMITA DE SAN ROQUE	194 76		1974	Ast. Gonden—Gin	(87) M Fishing	Oil 4SA 6Cy. 315 x 480	
EGRD		—		30.74	7.01	Side-Trawler	448kW (600bhp)	Duvant
DI Ead	Cooperativa de Productos Pesqueros	Spain		26.50	6.99		Carmelo Unanue	Zumaya
Rdr RT	Gujan			1 dk				10kn
6721518	ERMOUPOLIS	34 827 24 020		1967	Kawasaki Dtyd Co. Ltd.—Kob	(1080) M Ore/Bulk/Oil Carrier	Oil 2SA 6Cy. 860 x 1600	
ELAR	ex Golar Obo-72	69 497		AB	243.42(88)	32.26	13 726kW (18 400bhp)	MAN
2760	Cia. Ulysses S.A.	—			230.00	32.19	Str. heavy cargoes	Alkashi
DI Ead	Monrovia	Liberia			P 19.2 F 16.8 1 dk	19.51	7 Ho each 24.0 14 Ta ER	
Gc Rdr					rt 152		Der 4(10) 6(5) 2(2)	
RTv								16.75kn
6130939	ERMOUPOLIS	142 102		1947	Cant. Nav. Fili Accinelli—Italy	M General Cargo	Oil 4SA 6Cy. 210 x 320	
2234	ex Giovanna de Piro-65	356		30.43	5.16		112kW (150bhp) E made 34 fitted—	Kiel
	ex Fortune-58 ex Pirata	—		27.08	3.05	1 Ho 16.9 ER	Deutzwerke	8kn
	P. Skouris & I. Efthymiou	Greece		1 dk		8.205	Fuel 10.0t (d.o.)	
	Præus					1 Ha (8.2 x —) ER		
						1W Der 1(1.5)		
7303798	ERMUA	30 074 20 027	Φ100A1 strengthened for ore cargoes. Nos. 2, 4 & 6 holds may be empty	1973-5	Ast. Espanoles S.A.—Bbo	(188) M Bulk Carrier	Oil 2SA 6Cy. 900 x 1550	
EELF		54 889	ΦLMC	206.85(88)	29.06	13 278	11 190kW (15 000bhp)	Sulzer
DI Ead	Naviera Vizcaina S.A.	Spain		194.32	29.01	18.01	Ast. Espanoles S.A.	Sestao
Gc Rdr	Bilbao			P 33.6 F 16.8 1 dk			2 AuxB (1.0 t 1.5 t) ex gl 0.69MPa (7kg/cm ²)	
RTm/v				NS 98H	WB15431t incl. Topside tanks in holds 6644t Comb. btm & STs in Nos. 1, 3, 5 & 6 holds 6093t		Gen 3 x 400kW 450V 60Hz a.c.	15kn
				EL Lt 21'U3			Fuel (hvf)	
6106714	ERNA	141 95		1929	E. J. Smit & Zoon—Hgz	M General Cargo	Oil 4SA 3Cy. 240 x 380	
OCFP		198		31.50	5.69		NE 37	
	Christoph Bodevian	Federal Republic of Germany		ROD 8.4 1 dk	5.64	1 Ho 16.9 ER	Humboldt-Deumot	Koin-Deutz
	Warsingsfehn					G.241 8.217	Fuel 4.0t	7kn
						1W		
6106738	ERNA ELIZABETH	20 857 12 548		1959	Bethlehem Pacific Coast Sst Corp.	(5487) S Tanker	2 S Turb dr geared to ac shaft	
WHJK		35 464		—S Fo			11 190kW (15 000bhp)	Ocy
280193	Albatross Tanker Corp.	—		AB	201.48	27.51	30 Ta ER	
DI Ead	New York, NY	United States of America			192.03	27.44	L.44 587	
Gc Pld					1 dk		Der 2(5)	
Rdr					RW rt 203		Gen 2 x 600kW 220V 60Hz a.c.	16.5kn
RTm/v							Fuel 3 149.5t (o.f.)	

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